THE Tablet

WINTER 2021 | ADVOCATING FOR BRITISH COLUMBIA PHARMACY

COVID -19 vaccines

Pharmacists are helping to administer the Pfizer and Moderna vaccines.

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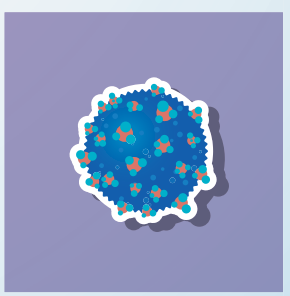
Years through Pharmacy

Looking back at some of pharmacy's biggest achievements PAGE 10



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ON THE COVER

From injection authority to opioid agonist treatment, pharmacy has changed a lot in 20 years.

Annette Robinson

Stepping up to support practice change

I am sure we can all agree 2020 has been a memorable year—certainly one for the record books. In my many years as a community pharmacist, I do not recall a period of time when our pharmacy landscape changed so quicky, in response to a health crisis the magnitude of the COVID-19 pandemic. There were such dynamic changes in technology, pharmacy scope and regulations. I am amazed by how quickly we were able to put changes in place, and what we accomplished when we all worked together towards the same goal: providing quality patient care while protecting our pharmacies, our staff and our patients.

While others made the shift to virtual platforms, community pharmacies across B.C. stayed open. We are fortunate that we have existing scope of practice, such as emergency supply, adaptations that included renewals and therapeutic substitutions. This ensured continuity of care and support for our patients and ensured that if they had to self isolate or couldn't see their prescriber, we were there to support them. Pharmacists spent many hours managing prescriptions and inventory to avoid potential drug shortages. We embraced new technology to accommodate the need for no-touch services, COVID-19 prescreening and appointment scheduling for vaccine administration.

The federal *Controlled Drugs and Substances Act* (CDSA), section 56 exemption, along with the supportive College of Pharmacists of BC regulatory changes, allowed B.C. pharmacists to support their patients with controlled substances prescriptions and to provide them with an option of home delivery. Pharmacists stepped up and practised to their scope by accepting faxed and verbal controlled-substances prescriptions, transferring these prescriptions to pharmacies within B.C. to assist their patients, to deliver if warranted, and where appropriate, having a pharmacy team member do it on their behalf.

Looking back, I am reminded that our immunization authority came from the midst of a pandemic. Can we expect that significant practice change follow the COVID-19 pandemic?

As we continue to navigate through two public health emergencies—emergencies related to the COVID-19 pandemic and the ongoing opioid overdose crisis—it has never been more important for pharmacists to show that we can and will step up to support practice change, in ways that allow us to improve the lives and health outcomes of our patients, all while maintaining the viability of our pharmacy business.

My heartfelt thanks go out to all the pharmacists and pharmacy teams across B.C. You have done an amazing job on the frontlines, showcasing the essential and important role we play as health-care providers. T

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Geraldine Vance

Resiliency the hallmark of B.C. pharmacists

For most, January is a time of renewal. A time to shake-off the cobwebs and look ahead to the year that will be. For me, it is also a reminder to reflect back to when I joined the BCPhA in 2012, and to examine where we are today.

The year 2012 was one of great upset for the Association and our members. In February 2012, the agreement we had with government was abruptly cancelled. We were thrown into chaos, tagged with the failure to meet cost saving goals in the agreement that were directly related to generic drug cost savings for government—over which we had no control. To say that our relationship with government was tense would be an understatement.

The road to rebuild trust with government was arduous. Our strategy to rebuild trust back to a place of mutual regard was driven by demonstrating pharmacists' ability to serve the public interest and to raise the bar for how pharmacists were valued. Coming out of 2012, two key issues dogged the profession: non-compliance with PharmaCare agreements and the methadone program. In the case of the former, audit teams in the ministry believed some pharmacies were knowingly going off-side and not meeting the terms of the agreement. And in the case of the methadone program, a handful of bad actors created a perception that many saw the program as a stream of easy revenue where patient care was a distant second.

Through innovation and hard work, the Association has helped to address both of these major reputational threats. The development of the regulatory compliance boot camp program helped members understand their contractual agreements with government and armed members with tools to track compliance. While audits still happen, their impact has been cut dramatically. We proved to government that our members are partners in protecting public funds. The OAT training program set the standard for pharmacist training on par with prescribers. Our ability to partner with the government and organizations like BCCSU in developing the program was new territory. It now stands as the only program of its kind in the country.

The 2020/2021 flu season, meanwhile, will stand as an example of pharmacists answering the call—long after COVID becomes a bad memory. The Minister of Health called upon pharmacists to help immunize record-numbers of the public and well over a million people received their flu shot from their community pharmacist. This has earned the profession the recognition of the Ministry, an important deposit in our reputational bank.

This year will bring many unexpected challenges.

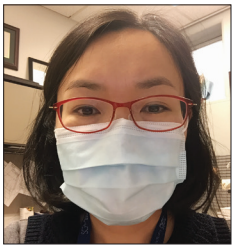
The task of a COVID-19 immunization program is immense. I know that every pharmacist is anxious to do their part. We have the opportunity to once again benefit the public interest. And if the last nine years have taught me anything, it is that I know pharmacists are resilient, committed and that the job before them will get done. T

The Tablet asks our contributors:

"How can pharmacy take a leadership role in the administration of COVID-19 vaccines in British Columbia?"

Derek Desrosiers is President and Principal Consultant and Desson Consulting Ltd. and a BCPhA Board Director. "First, build upon historical success of having vaccination administration authority since 2009 and the millions of successful flu vaccinations administered in the past 11 years. Secondly, ensure stringent safety protocols are in place for staff and patients. Third, ensure patients that you are keeping records, and will call them back for the second dose of the COVID vaccine."

Mohamed Zeid is the pharmacy manager at Latoria Pharmacy in Victoria. "Community pharmacies taking the lead in the administration of COVID-19 vaccines will enable our community to get over this pandemic. We already vaccinate around one million British Columbians every flu season, which is 20% of the population. We regularly deal with cold chain pharmaceuticals, and we have demonstrated that during the pandemic we can be open to the public, while conducting pharmacy services safely and effectively."



Cesilia Nishi is an Infectious Diseases clinical pharmacy specialist at Vancouver General Hospital and a clinical assistant professor at the UBC Faculty of Pharmaceutical Sciences. "Pharmacists are already taking a lead role in COVID-19 vaccination! Pharmacists have been involved in vaccine administration, preparation, storage, as well as, assisting public health in assessment of patients for contraindications and obtaining consent. With experience in influenza vaccination during the pandemic under our belt, B.C. pharmacists WILL be leaders in COVID-19 vaccination."

Member News

Do you have a professional or personal update you want to share in *The Tablet*? Email editor@bcpharmacy.ca to share your member news.

COVID-19 Updates continue each Tuesday

Since the beginning of the COVID-19 pandemic, the BC Pharmacy Association has endeavored to provide more frequent updates to our members. These COVID updates are delivered via email each Tuesday and are in addition to the traditional Practice Update newsletter members already receive.

We know during this these times of uncertainty, our members will benefit from having access to the latest information. As we move into 2021 and our attention turns to the COVID-19 vaccination effort, the BC Pharmacy Association has changed the focus of our COVID-19 updates to practical information on the vaccine distribution and administration program in B.C.

We know community pharmacists are already involved in administering the COVID-19 vaccines in B.C. As we move into the spring and summer, community pharmacy is expected to become more broadly involved as vaccine availability increases.

2021 Pharmacy Excellence Awards

The COVID-19 pandemic has not only changed the way we do business, it has also changed the way we celebrate the professional achievements of our colleagues. In the past, the BC Pharmacy Association has traditionally held calls for awards nominations over the winter with an awards selection process in the spring, followed by the presentation of our Pharmacy Excellence Awards at featured banquets held at in-person venues across British Columbia.

With the impact of the pandemic in the spring of 2020, large scale gatherings such as our traditional Awards galas were prohibited by health orders. Until the vaccination effort nears a stage where public health restrictions are lifted, the Association will continue to follow the advice and guidance of public health by limiting traditional Association events which would see members gather.

Nevertheless, we know our members are delivering pharmacy excellence. This past year has been one where real heroes stepped up, performing far beyond pre-pandemic pharmacy services.

We know our members worked hard to keep their staff safe and their pharmacies open. We were proud of our members in their stewardship of medication supplies to ensure those who needed it most did not go without. We witnessed how pharmacies organized medication deliveries to keep medication accessible. Despite the ever-changing information, we were encouraged by how our members became the go-to source of information for members of the public who sought health advice for COVID. And we are so proud of our members who are actively becoming involved in the administration of thousands of COVID-19 vaccines being distributed across B.C.

» Please help us recognize our deserving members. Nominations open March 1, 2021. Submissions close April 30, 2021.

Three members appointed to BCPhA Board

Three member pharmacists have been appointed to the BC Pharmacy Association Board of Directors in 2021

BY ANGELA POON

Chris Chiew is General Manager, Pharmacy and an Executive Committee member with London Drugs.

Raised in Northern Alberta, Chiew's interest in chemistry led him into a part-time job as a pharmacy assistant, encouraged by his Grade 12 chemistry teacher. He enjoyed the patient interactions and worked in the role until he was accepted into the pharmacy program at the University of Alberta. Chiew joined London Drugs shortly after graduation and has not moved companies since, working as a pharmacist, assistant pharmacy manager, pharmacy manager, and pharmacy operations manager before his current position as General Manager, Pharmacy.

"My position is a result of a network of caring people who helped me achieve success," he says.

In addition to his role as member of the Board of Directors with the Neighbourhood Pharmacy Association of Canada—where he also serves as Chair of the Audit and Finance Committee—Chiew will now step up as a member of the BCPhA Board of Directors, beginning in 2021.

"During various 'state of emergencies' such as forest fires and the current pandemic, pharmacists have been granted various privileges recognizing our ability to provide health care in the best interest of the public," says Chiew. "As a member of the Board of Directors, I hope to be able to help show various public officials how valuable we are and make these privileges permanent in our everyday practice."

In Chiew's free time, he enjoys hiking with his family and golfing.

Pindy Janda works as General Manager, Clinical and Specialty Division with Imperial Distributors Canada Inc.

Upon graduation from the University of British Columbia in 1997, Janda worked as a frontline pharmacist for more than 20 years, including as pharmacy manager, patient care pharmacist, certified diabetes educator and media spokesperson.

In 2015, Janda put her skillset to work as a marketing manager for an upstart generic drug company, followed by her current role as General Manager, Clinical & Specialty Division after she joined Imperial Distributors Canada Inc. in December 2016.

At Imperial Distributors Canada Inc., Janda co-created UBC's first industry-specific pharmacy rotation within the Faculty of Pharmaceutical Sciences and has since welcomed several practicum students studying specialty pharmacy. Janda was also the creator and host of a health-info talk show for the South Asian community.

As a new member of the BCPhA Board of Directors for 2021, Janda is looking forward to her next career challenge.

"With my varied experience in retail pharmacy as well as the pharma industry, I hope to contribute to the overall vision of the BCPhA in promoting and advocating for all community pharmacists in British Columbia," Janda says.

In addition to spending time with her 18-year-old daughter, Janda enjoys travel, community service, long walks, reading and shopping.

Ajit Johal is Clinical Services Coordinator with Wilson Pharmacy, a Clinical Pharmacist with Laurel Prescriptions, Founder and Clinical Director of TravelRx Vaccination Clinic, and a Clinical Instructor with the UBC Faculty of Pharmaceutical Sciences

The son of long-time BCPhA member Parm Johal, Johal was inspired by his father to join the profession and was fortunate to join the family business—Wilson Pharmacy—after graduating from the University of Toronto's pharmacy program in 2012. Here, Johal focused on growing the pharmacy's clinical services, initiating a partnership with the Coast Mental Health Medication Program, as well as launching a travel vaccination clinic that allows customers to book appointments online at travelrx.ca.

Since 2015, Johal has been an instructor with UBC's Faculty of Pharmaceutical Sciences, where he has coordinated elective courses and co-lead therapeutic modules. Since 2019, Johal has been the Neurology and Psychiatry lead for the Flexible Doctor of Pharmacy Program at UBC.

Beginning in 2021, Johal looks forward to his latest role as a member of the BCPhA Board of Directors.

"The Board of Directors have done a fantastic job during the difficult times that have afflicted us all," Johal says. "I hope to support the continuity of that work and try to elevate the pharmacy profession as one that is recognized as a significant contributor to primary care. The world is changing fast, so I hope to bring innovative ideas to support practicing pharmacists in B.C."

In addition to his many pharmacy-related roles, Johal enjoys staying active playing tennis (and was a former competitive tennis player in his youth), as well as spending time with his wife.

The three new Board members assumed their roles Jan. 1, 2021, and have joined fellow Board members Annette Robinson, Jamie Wigston, Keith Shaw, Derek Desrosiers, John Forster-Coull, Gary Go, Colleen Hogg, Mike Huitema, Chris Waller, and Greg Wheeler. *Learn more about the 2021 Board of Directors at bcpharmacy.ca/about/board-of-directors.*

Congratulations to **Annette Robinson** and **Greg Wheeler**, who were elected in November 2020 to serve on the BCPhA board for the next three years. Their terms began on Jan. 1, 2021.

Annette Robinson will serve as Board President for 2021 and holds a current role as Pharmasave Regional Pharmacy Manager, in addition to serving on the College of Pharmacists of BC's Discipline Committee.

Greg Wheeler has been a pharmacy owner for over 16 years. Currently, he owns Oliver Pharmacy Remedy's Rx, City Centre Pharmacy Remedy's Rx and Rose Valley Pharmacy Remedy's Rx located in Oliver, Penticton, and West Kelowna, respectively.

Busiest flu season yet for pharmacists, despite distribution delays

BY ANGELA POON AND MICHAEL MUI

To date, B.C. pharmacists have administered a record-setting number of flu vaccines during the 2020/21 flu season, despite ongoing supply chain delays from public health authorities.

At a news conference in late December, Health Minister Adrian Dix said there were at least 1,388,805 doses of influenza vaccine administered across B.C. in the 2020/21 flu season. More than one million of those were administered by pharmacists.

"Consider that last year, in total, the entire influenza vaccine effort last year, pharmacists administered 724,256 doses. To date this year, and we're just partway through the campaign, pharmacists have administered 1,001,204 doses," Dix says.

Since late December, the pace has slowed as the attention of the public and health professionals like pharmacists shift towards the COVID-19 vaccine. Some small quantities of the flu vaccine may still be available for ordering through the end of the season.

The early season sharp increase in vaccine administrations was not without its challenges, however. Given the strong push from government for all British Columbians to seek out a flu shot to protect themselves and others from sickness amidst the COVID-19 pandemic, demand for vaccines has been at an all-time high. With many pharmacies receiving smaller than anticipated numbers of flu doses, coupled with customers requesting their flu shot earlier in the season, pharmacies quickly depleted their vaccine supplies with no indication of when their supplies would be replenished.

When Anthony Chiam, pharmacy manager at Northview Compounding Pharmacy, called the North Shore Vaccine Depot on Oct. 22 to inquire about future vaccine distribution for his pharmacy, he was told that Vancouver Coastal Health had cut off flu shot supplies to pharmacies, with no word on when distribution would be re-established.

A Victoria-area Pharmasave, with a history of administering over 1,000 flu vaccines in a regular season, depleted their initial allotment of 400 doses in just three days, says owner Maria Kwari. The store ended up with a waiting list of more than 1,000 people in late October, with no word on when their next allotment would become available.

"This has put a very large strain on the pharmacy team as we are constantly fielding questions without having a solid answer and we cannot book appointments or plan ahead," Kwari says.

With similar complaints coming in from member pharmacists from across B.C., the BCPhA presented its concerns to the Ministry of Health, who assured Association staff they were working to rectify the distribution delays with health authorities. T

Flu shots by pharmacists

2020/21	1,001,204+
2019/20	724,256
2018/19	707,573
2017/18	665,184
2016/17	557,533

20 YEARS IN REVIEW

Reflecting on Pharmacy's Path from 2000-2020

PRODUCED BY ANGELA POON

As we enter a new decade, with many opportunities and challenges on the horizon for pharmacists, four former presidents with the BC Pharmacy Association's Board of Directors reflect on the past 20 years of advocating for pharmacy in B.C.

While the practice of pharmacy has changed immensely since 2000, the purpose of the BCPhA remains the same—to support pharmacists and pharmacies in their day-to-day delivery of pharmacy services, to enhance the role of pharmacy within the greater health-care system, and to advocate for the economic viability of the business of pharmacy.

Whether you have been practicing pharmacy for 40 years or 4 months, *The Tablet* invites you to look back at some of pharmacy's biggest achievements and most challenging obstacles of the past 20 years.

"Prescribing was the real beginning of the expansion of scope of practice and the move towards pharmacist prescribing not only in B.C. but across the country," says Derek Desrosiers, bottom left.

2000-2005

Derek Desrosiers served on the BCPhA Board of Directors from 2000-2006 and held the role of president for two consecutive fiscal years, in 2004/05 and 2005/06. He is a former pharmacy owner, CEO of uniPHARM Wholesale Drugs, and BCPhA Director of Pharmacy Practice Support. Currently, he is President and Principal Consultant at Desson Consulting Ltd. and current Board member with the BCPhA.

What were some of the most significant issues concerning pharmacy in B.C.?

We were dealing with a pharmacist shortage and struggling with how to overcome that shortage. It had been going on for a number of years already. A 20 per cent spike in prescriptions and only a one per cent increase in pharmacists between 1997 and 2001 caused a real labour crisis during this time. A lot of time was spent cultivating relationships with government and the Ministry of Health as the BCPhA built up its body of advocacy work. The cost of dispensing was an ongoing issue, and the dispensing fee has always been a significant issue of concern to B.C. pharmacists. The actual cost of dispensing issue led to a partnership that was formulated in late 2005 and implemented later, in March 2006.

Were there any issues at the time that inspired debate amongst pharmacists?

Back in that era, the First Nations Health Authority didn't exist, and B.C. pharmacists were still dealing with Non-Insured Health Benefits (NIHB), as the federal health program for Indigenous peoples. There were always ongoing payment and coverage issues with NIHB, to the point that there was even talk of a lawsuit at one time to sue NIHB over some billing issues. The BCPhA appointed the Canadian Pharmacy Association on this issue, but it was ultimately determined that a lawsuit would not be precedent setting and would take many years to resolve. Also, the idea was abandoned as it was felt to be too risky in terms of the likelihood of it ending all communication and government relations with NIHB.

What were some of the biggest gains or achievements?

Pharmacists in B.C. were granted the right to prescribe emergency contraception in late 1999 and so in 2000, there was a significant amount of training going on for B.C. pharmacists throughout the province. Over 1,800 pharmacists were trained as ECP emergency contraceptive pills (ECP) prescribers in 2000. Pharmacist expertise was added to the BC Nurse line in the EPIC project in 2003. And the BCPhA partnered with the Ministry of Health to distribute the BC Health Guide to British Columbians throughout community pharmacies.

How did you see pharmacy change during this time period?

I think this era—and especially with the advent of ECP—prescribing was the real beginning of the expansion of scope of practice and the move towards pharmacist prescribing not only in B.C. but across the country. Additionally, pharmacist salaries started to increase more to be in line with other health-care providers.

How did the BCPhA's Board help impact positive change for pharmacists?

The BCPhA Board worked hard at developing inter-organizational relationships with a number of other health-care professional bodies, including regulators and advocacy organizations. Also, there was significant growth in the working relationship between the BCPhA and the Ministry of Health. Much of this was achieved through the advocacy work done individually by many Board members meeting with their MLAs in their local constituencies.

2006-2010

Linda Lytle served on the BCPhA Board of Directors from 2005-2011 and held the role of president in 2007/08. Lytle started her career as a pharmacist in Campbell River and Vancouver, before joining the College of Pharmacists of BC as the Communications Coordinator in 1980. She went on to serve as Deputy Registrar for seven years and Registrar for 10 years, before retiring in 2005. She currently divides her time between Vancouver and Mexico's Pacific Coast.

What were some of the most significant issues concerning pharmacy in B.C.?

The significant issues during my time as a Board member continued to include the pharmacist workforce shortage, economic issues relating to prescription preparation costs and rising competitive pharmacist compensation vs. PharmaCare prescription fees and other cost containment efforts, the College's Professional Development and Assessment Program (PDAP) requirements, expanding the role of the pharmacist, and the development of formal pharmacy technician education, practice standards and registration.

Were there any issues at the time that inspired debate amongst pharmacists?

Two of the above-noted topics created a lot of controversy, which affected the work of the Association: The College's PDAP and pharmacist prescribing beyond the emergency contraception products (which had created their own controversy when introduced in 1999).

What were some of the biggest gains or achievements?

As with many other types of controversies, both topics lead to pharmacy gains with the Association's involvement. Some adaptations were made to the PDAP which provided additional methods of meeting the College's continuing competency requirements, and expansion of the pharmacist's role paved the way for enhanced roles in diabetes management, smoking cessation programs, asthma management and medication adherence programs, followed by injection authority for pharmacists trained to do so. The Association was an active participant with its 2003 position paper, "Expanded Roles for Pharmacists."

Another gain during the timeframe was the Association's participation in the Activity-Based Costing Study, which resulted in the collection of accurate information pertaining to the actual cost of producing a prescription and documenting the range of pharmacist's hourly compensation and average annual salary. The study also highlighted the complexity of the role of the individual pharmacist, which proved useful in the creation of public messaging promoting the role of the pharmacist in public health.

All of these efforts lead to useful and high-profile government partnerships in the Medications Return Program and the province-wide distribution of over 750,000 copies of the B.C. HealthGuide handbook by pharmacies in all areas of the province.

How did you see pharmacy change during this time period?

My sense is that pharmacy changed during this time period with an increased level of confidence by individual practitioners and pharmacy businesses, supported by the BCPhA's innovative measures to place the profession in the public's eye, on the government's radar, and changing other health profession's perceptions.

How did the BCPhA's Board help impact positive change for pharmacists?

The Board of Directors contributed to the "atmosphere of change" by encouraging Association staff to be creative in their programming and by taking steps to ensure that pharmacists themselves knew that their work was being recognized and appreciated.

2011-2015

Don Cocar served on the BCPhA Board of Directors from 2009-2015 and held the role of president in 2013/14. Following graduation in 1994 from the Univeristy of British Columbia, Cocar's first job in pharmacy was in Whistler, before returning to his hometown of Kelowna the following year. He has since worked throughout the Okanagan Valley, mostly owning his own independent pharmacies. He is currently the owner of Knights Pharmacy in Penticton.

What were some of the most significant issues concerning pharmacy in B.C.?

Two of the largest issues at the time were: the remuneration cut back by PharmaCare and third-party payers and the rampant audits being done on pharmacy by PharmaCare.

Were there any issues at the time that inspired debate amongst pharmacists?

There was always good debate around the BCPhA Board table, but I guess the biggest issue we faced at that time—and continue to face—is the lack of solidarity we have amongst pharmacies. Independents, banners and corporate pharmacies all have different agendas, and it is hard to fight a united front without the solidarity between pharmacy groups.

What were some of the biggest gains or achievements?

For a period of time, we did all come together as a united front and we were able to meet with PharmaCare and third-party insurers to voice our concerns and believe it did make a difference going forward.

How did you see pharmacy change during this time period?

As I alluded to earlier, we had buy-in from all stakeholders in pharmacy to come together to voice our concerns to government and insurers, which I believe made a difference and continues to make a difference.

"The Board of Directors contributed... by encouraging Assocation staff to be creative in their programming and by taking steps to ensure that pharmacists themselves knew that their work was being recognized," says Linda Lytle, bottom left.

How did the BCPhA's Board help impact positive change for pharmacists?

There were many great minds on the Board during my time, some very influential people from both corporate pharmacy and independent pharmacy. We put our personal agendas aside and made decisions together to better the pharmacy in general. It was very rewarding.

2016-2020

Chris Waller has served on the BCPhA Board since 2015 and held the role of president in the final quarter of 2018 and the entirety of 2019, following the restructuring of the BCPhA fiscal year. Waller grew up in the pharmacy world, working for his pharmacist father Ron Waller at Lakeside Medicine Centre Pharmacy in Kelowna in the 1980s before attending pharmacy school at the University of British Columbia. After graduation in 1998, he returned to Kelowna and Lakeside Pharmacy, where he is now owner pharmacist. He continues to serve on the BCPhA Board until the end of 2021.

What were some of the most significant issues concerning pharmacy in B.C.?

The viability of small independent community pharmacy continues to be challenging. Most of this sector of pharmacy relies on prescription sales and tends to be smaller format stores with little room for much retail product. Automation is another part of health care that will continue to have an impact on pharmacy. Mail order, Zoom meetings, e-prescribing, central filling, and preferred provider networks will all continue to take away from the one-on-one interactions that patients have with their community pharmacist.

Were there any issues at the time that inspired debate amongst pharmacists?

Pan-Canadian pricing, OAT training, changes to pharmacy ownership disclosure requirements, expanding the scope of practice of pharmacists to include things like treatment of minor ailments, and changes to some third-party insurers that grade pharmacies based on patient claims history and ability to offer structured coaching for patients that are not compliant and may not want to be. Most of these things are designed to improve patient outcomes and improve the quality of care that patients get at their community pharmacy, but with less funding these kinds of changes to patient care remain difficult for pharmacists.

What were some of the biggest gains or achievements?

Vaccinations. In recent years, pharmacies are the places to go to get your flu shot, travel vaccines, and schedule publicly funded vaccines and unfunded vaccines like Shingrix and Prevnar 13. Pharmacies are in most cities and towns and are generally easily accessible for these shots. Our next big challenge will be stepping up for the COVID-19 vaccine when we are called upon.

How did you see pharmacy change during this time period?

I find that I spend much more time documenting and charting on the patient's chart or by writing on the prescription. All this to ensure that I am more protected against future audits, but also to ensure my fellow pharmacist colleagues understand the communication between me and the patient or allied health-care professional such as physicians, nurses and social workers.

How did the BCPhA's Board help impact positive change for pharmacists?

So many things over the years: Both the regulatory bootcamp and OAT training showed our Ministry of Health and PharmaCare that the BCPhA can set all pharmacists on a structured path of how to ensure proper documentation on prescriptions that we receive and what insurers are looking for with audits. With OAT training, it offered a structured approach to a program that has changed over the years—from a time when pharmacists were compounding 1mg/ml methadone with Tang and prescribers were writing on regular duplicate pads to the present day where we have commercial 10mg/ml methadone as well as Suboxone sublingual tablets and injectable Sublicade (and other options), all requiring specialized duplicates in order to ensure proper dispensing and compliance.

Other areas include working with the College of Pharmacists of BC to produce the pharmacy manager training program and with the First Nations Health Authority to ensure a smooth roll out of the new Plan W program for B.C's First Nations communities. T

Jason Wilhelm

Harlan Lahti

Top five supplements for recommendation

Two leaders in the field of natural pharmacy share the highest recommended supplements for educating customers on enhancing their nutritional intake.

BY HARLAN LAHTI B.SC.PHARM & JASON WILHELM BSP

With today's level of Internet expertise, many customers are often well-educated as to possible dietary lapses, but others turn to the experts—including pharmacists—for recommendations on what their nutritional intake may be lacking. Either way, an understanding of the role the most essential nutrients play in good health is a win-win situation both for the customer and the pharmacy's bottom line.

As leaders in the field of natural pharmacy, we recommend many supplements for our customers, but five in particular stand out to us. In some cases, these micronutrients are lacking in the diet. In others, an increase in dosage can greatly enhance overall health, especially immune response. Our five most recommended supplements are: vitamin D3 (cholecalciferol), magnesium, vitamin C (ascorbic acid), omega-3 fatty acids, and probiotics.

The first three are vital nutrients, without which—or in lower-than-needed amounts—the body can slip into a disease state. Unfortunately, the RDAs for most important nutrients are less than optimal, with the medical profession frequently under-educated as to optimal dosing, and often discouraging supplement use.

Vitamin D3

Known as the "sunshine vitamin," due to the fact it is created when UV light penetrates the skin, vitamin D3 provides a host of important benefits for the human body. Vitamin D3 is the only vitamin that possesses hormonal action, influencing various metabolic processes. Once produced by sunlight, or ingested as a supplement, the liver and kidneys create the hormone calcitriol, which—among its many vital functions—controls calcium absorption in the bones.

Research has shown that the sunshine vitamin plays a vital role in regulating gene expression. In a randomized clinical trial led by Arash Hossein-Nezhad of Boston University's Department of Medicine, Endocrinology, vitamin D3 supplementation that improved serum 25-hydroxyvitamin D concentra-tions was associated with at least a 1.5 fold alteration
in the expression of 291 genes. There was a significant difference in the expression of 66 genes between subjects at baseline with vitamin D3 deficiency (25(OH)D<50 nmol/L) and subjects with a 25(OH)D>50 nmol/L.

After vitamin D3 supplementation, expression of these 66 genes was similar for both groups. The researchers concluded that any improvement in vitamin D3 status will significantly affect expression of genes that have a wide variety of biologic functions of more than 160 pathways linked to cancer, autoimmune disorders and cardiovascular disease. (All of these conditions have been associated with vitamin D3 deficiency.)
Our awareness of the importance of quality sleep has increased significantly in recent years. Following rat studies showing that vitamin D3 receptors are present in the parts of the brain that regulate sleep, an uncontrolled clinical study of 1,500 patients found that low levels of vitamin D3 are associated with poor sleep quality. Participants who increased their vitamin D3 levels experienced significant improvement in sleep and neurologic symptoms.

Recently, numerous news outlets have suggested that taking vitamin D3 can help protect against viruses. While anecdotal evidence has suggested this may be the case, no study has proven conclusively that vitamin D3 can effectively disable a virus. What is known, however, is that vitamin D3 boosts the immune system, and inhibits the release of inflammatory cytokines—both highly beneficial in terms of suppressing the negative effects of viral infections.

When considering vitamin D3 supplementation for bone health, it is also important to recognize that increasing calcium absorption can negatively affect the cardiovascular system. For this reason, we highly recommend using vitamin K2 (MK-7) in conjunction with vitamin D3. Both contribute to the absorption of calcium during bone formation and facilitate the interaction of calcium and magnesium. However, in the absence of vitamin K2, calcium circulating within the body can be deposited in the arteries, leading to atherosclerosis. Vitamins D3 and K2 work together to ensure calcium is deposited in the bones and not in the arteries.

Since vitamin D3 deficiency is highly prevalent throughout the world, having one's D3 levels checked makes sense. Canadians receive little sunlight, so it is particularly important for us to know our levels and to respond promptly if they are low. The generally accepted optimal level of vitamin D3 is 100 nmol/L. We recommend a daily dose of 500 to 1,000 IU for children and 5 to 10,000 IU for adults. Since supplemental vitamin D3 use has been associated with blocking the production of melatonin, it is better to take it during the first half of the day.

When converting to its active form within the body, vitamin D3 uses magnesium, which is why we suggest taking both at the same time.

Magnesium

According to Health Canada, nearly half of all Canadians are deficient in magnesium, which works closely with vitamin D3 to support bone health. Magnesium deficiency can lead to a host of conditions including muscle cramps, restless legs, migraines, fatigue, insomnia and anxiety.

Magnesium is a macro mineral that plays many significant roles in the body's metabolism and homeostasis. It is used in the production of ATP and, in its absence, cellular energy is weak. Magnesium is also used in the production of DNA and RNA and, without it, proteins needed to maintain the body will not be synthesized. This often-overlooked mineral is a co-factor for over 600 enzymes, and an activator for close to 200 more.

Magnesium also helps maintain blood pressure and lower insulin resistance. Its deficiency over the long term can lead to complications with heart disease and both type 1 and type 2 diabetes. Used with vitamin B6, magnesium can be very helpful for PMS.

One of the questions Finlandia staff are frequently asked is, "How can I protect myself and my family from EMFs?" This question has become particularly frequent with the introduction of 5G. We now have substantial evidence backing magnesium's role in helping the body deal with electro-magnetic frequencies. Johns Hopkins alumnus, Dr. Martin Pall, who has a Ph.D. in biochemistry and genetics from Caltech, has studied the role of calcium channel blockers in the reduction of negative effects from EMFs. Research into this is ongoing but certainly, magnesium's ability to affect voltage gated calcium channels (VGCCs), appears to help reduce possible harm.

Magnesium is not difficult to ingest or absorb, and excess will be excreted in diarrhea or the urine. Magnesium chloride, available as a gel, can be applied to the skin, where it helps reduce soreness in muscles, and cramping. It is also easily absorbed through the skin via an Epsom salts bath. At Finlandia, we exclusively recommend magnesium bis-glycinate, which is the most bio-available form.

Suggested daily dosages are 80 mg for children aged 1 to 3, 130 mg for children aged 4 to 8, 200 mg for youth ages 9 to 18, and 400+ mg for adults of 19 and over.

Vitamin C

Vitamin C is often overlooked as most people believe they are getting an optimal dose in their diet. However, during the winter months, when colds, flu and other viruses are spreading, we recommend our customers take a supplement.

Within the body, ascorbic acid plays a number of important roles including supporting the manufacture and maintenance of collagen in fibrous tissues, skin, bones, teeth, and blood vessels. Since collagen synthesis creates and maintains the protective tissue barrier present in the lining of the respiratory airways and lungs, and vitamin C also inhibits inflammation, it is helpful in ameliorating lung conditions including viral infection and pneumonia. Vitamin C is also a powerful antioxidant that works in concert with vitamin D3.

A little-known benefit of vitamin C is that it shortens the length of time the body takes to adjust to a hotter environment. Daily dosing has been shown to positively affect heat acclimatization—useful for "cold adjusted" Canadians taking vacations in warmer climates. Similarly, adaptation to cold increases as blood ascorbic acid level rise.

Numerous studies have shown that vitamin C deficiency results in impaired immunity and higher susceptibility to infections. In turn, infections significantly reduce vitamin C levels due to enhanced inflammation and metabolic requirements. During "winter ills" season, vitamin C can play an important role in supporting the lungs, where its concentration in the alveolar macrophage cells is higher than that found in blood plasma. It contributes to immune defense by supporting various cellular functions of both the innate and adaptive immune systems and has been shown to enhance differentiation and proliferation of B and T-cells (including natural killer cells). Regular use of vitamin C reduces the duration and severity of a cold in progress.

We routinely recommend a dose of 500 mg BID for children under 8 years, and 1 - 2,000 mg BID for anyone over this age. Vitamin C is water-soluble and cannot be stored by the body, which is why daily doses should be divided.

Omega-3 fatty acids

These essential fatty acids (oils) cannot be manufactured by the body and so must be supplied in the diet. Omega-3 oils play a number of important roles in the body, the most notable of which is to suppress inflammation. This is important since inflammation is at the root of all chronic diseases, including heart disease, diabetes, osteoporosis, arthritis, and cancer.

In times when the human diet was healthier, the ratio of omega-3 oils to inflammatory omega-6 oils was 1:3. Nowadays, it has been estimated at 1:16, perhaps explaining why these diseases have become so prevalent.

A diet rich in omega-3 oil (through food and/or supplements) has been shown to improve heart health by lowering triglycerides, increasing HDL, and reducing VLDL.

This healthful oil has also been shown to improve mood and help combat depression. Studies suggest that omega-3 oils may also enhance memory and cognitive function as well as brain development.

Omega-3 oils are available in a number of different formats, including liquid and capsules, and those suitable for vegans/vegetarians. Most omega-3 oils come from small fish, or krill. The two important constituents of omega-3 oils, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) have different properties and exert specific effects on the body. Products with a higher EPA ratio typically target inflammation, while higher DHA formulations target cognitive function.

Krill oil is considered a superior form of omega-3 that does not oxidize easily and is absorbed well. It also contains astaxanthin, a potent antioxidant. Since krill is short-lived and reproduces quickly, it is both sustainable and unlikely to have accumulated toxins.

The more natural triglyceride form of omega-3 oil is superior to the ethyl ester form as it is better absorbed, exhibits greater stability, and is less easily oxidized.

We generally follow the dosage recommended on the package label.

Probiotics

These friendly bacteria supplements continue to proliferate in the marketplace, with targeted formulations for specific ages and health conditions. As we learn more about the vital role the gut plays in our health and well-being (including our ability to sleep soundly) a targeted probiotic is recommended for everyone.

The interior lining of the gut is a mere one-cell thick, its integrity either protected or destroyed by the micro-organisms that live there. Friendly bacteria work closely with our bodies to enhance immunity, and to aid the process of digestion. These bacteria secrete several B vitamins including folate; vitamin K, and the short-chain fatty acid butyrate, which suppresses inflammation and provides the cells of the colon with energy.

Unfortunately, overly processed diets, stress, aging, and the use of certain pharmaceuticals, including antibiotics, can kill off friendly bacteria. This affects the delicate balance of intestinal flora, and ultimately the health of the entire body.

We are only now beginning to understand the vast impact the health of our gut has on mental wellbeing, weight, immunity and various conditions such as eczema. Fecal transplants are being studied for more than just the treatment of C. difficile, in recognition of the value of healthy gut flora. A targeted probiotic is one of the most important daily supplements we recommend for our customers, whether they be healthy, or suffering from specific health conditions.

As with omega-3 supplements, we recommend the dosage indicated on the label. T

Pharmacists quickly became involved in administering the COVID vaccine after B.C. began receiving shipments of the Pfizer vaccine, seen here in its ultra-cold packaging.

BC GOVERNMENT PHOTO

Pharmacists involved in early COVID-19 vaccine program

B.C. pharmacists called in to administer COVID-19 vaccines at first clinics for priority groups **BY MICHAEL MUI**

Two COVID-19 vaccines have now been approved in Canada and it is expected pharmacists will play a broad role in their administration for patients across British Columbia.

On Dec. 9, Canada approved the Pfizer-BioNTech COVID-19 mRNA vaccine, followed quickly by the approval of the Moderna mRNA vaccine on Dec. 23. Batches of both vaccines have already arrived in B.C. and are being administered in a phased approach.

According to the B.C. Ministry of Health, the first phase will go through February and targets up to 150,000 people, with focus on those living in assisted living or long-term care facilities, hospital workers and First Nations communities.

The second phase will begin in from February to March, when the provincial government plans to vaccinate up to 400,000 people, with priority groups in this phase being seniors living in the community, the homeless population, and 20,000 community- and hospital-based health workers across the province. It is during this second phase that community pharmacists are expected to become more involved in the administration of vaccines.

From April to September, the provincial government expects to vaccinate the rest of the general population, with the elderly to be prioritized by order of age.

In total, the Ministry of Health expects to receive up to 792,000 doses by the end of March; about two-thirds will be the Pfizer-BioNTech vaccine, while the remainder will come from Moderna. Supply disruptions, however, are already beginning to adjust these numbers.

Throughout 2020, federal officials reviewed and approved the vaccines quickly, enabled in part by federal orders issued in May and September 2020. According to Health Canada, the orders permitted drug companies to reduce administrative requirements and have a direct line to those who review COVID-19 clinical trial applications.

Dr. Megan Bettle, director general of the COVID-19 regulatory response team at Health Canada, said normally, it would take "several years" for a company to develop a vaccine. Before the COVID-19 pandemic, vaccine developers had to first complete studies on both animals and humans, collect the data, and submit the information in a single submission.

With the urgency created by the pandemic, vaccine developers were instead permitted to submit their data in a "rolling" process, where information was reviewed by Health Canada in real time.

"So, for example, the animal studies—the preclinical data—might be available earlier, and that could be provided and reviewed first. Whereas data from later clinical studies would be provided later… at some point we would have enough information to make an authorization decision," Bettle said.

> *"We made the decision that for December and January, all of our doses of both Pfizer and Moderna will be going to protect people with their first dose, because we can do that and protect almost twice as many people," Henry said.*

Even following the decision to authorize, vaccine developers would be required to continue to submit ongoing data as it becomes available, she said.

"Although everything about this process is faster, it still maintains the same standards for the reviews of the product, so we still require the same standards of safety, efficacy and quality," Bettle said.

In total, Pfizer-BioNTech's product was obtained regulatory approval in two months.

"For a normal product, we would take six to 10 months to review it, but that's kind of more workload management. From the Health Canada review part, we've greatly accelerated that simply by throwing a lot of people and a lot of time at it, as well as introducing these new review processes so we can get the data as soon as possible, as opposed to waiting for the studies to be done."

In total, Canada has made agreements in principle with seven vaccine developers, focusing on vaccines that use three types of technologies. Dr. April Killikelly, the vaccine technology lead for COVID-19 at the Public Health Agency of Canada, said vaccine developers in particular focused on immune responses that target the coronavirus's surface "spike protein."

"The hypothesis is that when SARS-CoV-2 virus makes contact with the host cell via ACE-2, anti-spike antibodies or other cellular immune responses could disrupt this interaction between the virus and the host cell," Killikelly said.

Both the currently approved vaccines in Canada work by providing our cells instruction to create the coronavirus "spike protein," so our immune systems can recognize COVID-19 as a threat and trigger a response. While other vaccines are being developed, the Pfizer-BioNTech and Moderna vaccines are novel in that, unlike traditional vaccines, their delivery mechanism is achieved through the use of messenger RNA (mRNA).

An enormous advantage of mRNA vaccines is speed of production, said Dr. Marina Salvadori, clinical lead for COVID-19 at the Public Health Agency of Canada.

"This is a really interesting technology. It's been in the works for a few years, but this would be the first widespread vaccine that will be used using this technology," Salvadori said in a recent presentation for Canadian vaccine providers.

"What happens is a messenger RNA is created that codes for the coronavirus spike protein. This synthetic messenger RNA is coded in a lipid nanoparticle, so it can easily pass through the cell membrane and inside your cell. Then the messenger RNA is released.

"It floats around until it finds a ribosome. The ribosome then translates the messenger RNA into a protein, and the protein gets displayed on the surface of your cell. This then will elicit antibodies and T-cells."

More traditional vaccination methods include protein subunit vaccines and vaccines that utilize virus-like particles. COVID-19 vaccines using the former method are being developed by Novavax and Sanofi, while vaccines using the latter method are being developed by a Canadian company, Medicago. Canada has advanced purchasing agreements with all three companies, Salvadori said.

Protein subunit vaccines work by delivering protein directly into the body to directly elicit an immune response, instead of using mRNA to instruct our cells to create the protein. Vaccines using virus-like particles do not have any nuclear materials or genetic material at all. Instead, the vaccine is a

modified spike protein made to "look just like the virus."

However, the manufacturing timelines for both these traditional methods are slow.

"That's why there are, as yet, none available," Salvadori said.

While the Pfizer and Moderna mRNA vaccines are quick to produce, their clinical trials have shown promising efficacy data of approximately 95% each in their sampled patient populations. Neither of the vaccines have been recommended for children or those who are pregnant.

Though they were approved quickly, both vaccines also experienced supply disruptions, which has impacted B.C.'s vaccination plans.

This supply impact is in part why the provincial government has determined to extend the recommended period between the first and second dose from 21-28 days to 35 days, then again extended to 42 days.

"We are working with what we have available to best address those most at risk and those hotspots and outbreaks that are happening in communities around the province," said B.C. Public Health Officer Dr. Bonnie Henry on Jan. 29.

"We will be getting back on track. It will be slow and slower than we wanted, but we are confident that we will be able to meet our phase one and phase two objectives as quickly as we can."

By late-January, more than 87,000 people had already received a COVID-19 vaccine—among them included all eligible long-term care facility residents. Some of those shots were administered by community pharmacists, with many being invited by long-term care centres or health authorities on an individual basis.

> *"The faces of the people who got the vaccine, they were so happy. It was a party. All the residents were ready to dance, they were ready to go out, it was pure happiness," Trejus said.*

Things moved fast. Pharmasave White Rock pharmacy manager Jason Chan was notified by an assisted-living facility his pharmacy traditionally works closely with that Fraser Health was arranging vaccines for the facility's residents. He was given a week's notice that a clinic was happening soon and was among four vaccine providers who showed up for the clinic. Among the vaccine providers were two physicians, two registered nurses, and Chan.

"There were 19 vials between the four of us. That was enough for about 95 patients," Chan said. To him, it was clear the health authorities needed help—his pharmacy even had to provide additional alcohol swabs and hand sanitizer due to lack of supplies at the clinic.

"At the end of the day, we ran out pretty quickly. For most people, I don't think it hurt at all. The dose is small if you compare it to a flu vaccine and most of them were pretty anxious or excited to get it," Chan said.

Each vaccine provider first drew 1.8 mL of diluent, which comes with the Pfizer vaccine, injected the diluent into the vaccine vial, before drawing out the same amount of air to equalize the pressure within the vial. Each vial was good for five to six doses.

As patients arrived, a nurse acted as a dedicated screener. Any patients who had an anaphylactic reaction to any vaccine in the past, or anaphylactic reactions of unknown origin, and some immunocompromised patients were determined to be ineligible for the vaccine.

"I felt super confident," Chan said. "Us pharmacists, we've done hundreds of thousands of vaccines these past few months. We just went through the busiest flu season ever—we could do so many more if we were utilizing more pharmacists in the community."

Diana Trejus, a pharmacist with Medical Pharmacy who services long-term care facilities, had a similar experience in early January when she was called upon to help. Instead of administering the vaccines, she was asked to review the eligibility of more than 200 patients. In her case, she and a nurse reconstituted and pre-drew vaccines to be ready for other nurses who administered the vaccines to patients.

"The faces of the people who got the vaccine, they were so happy. It was a party. All the residents were ready to dance, they were ready to go out, it was pure happiness," Trejus said.

Alex Dar Santos, a former president of the BC Pharmacy Association, was also called upon. He and six other pharmacists attended the Vancouver General Hospital, where they vaccinated hospital staff who were deemed at highest risk.

"The administration did all the pre-screening and consent, so the job of the pharmacists was to strictly administer and provide a bit of information on what to expect and deal with during post-vaccination care," Dar Santos said.

"The time-consuming part, quite frankly, was the mixing of the Pfizer product. I would say I spent about 50 per cent of my time preparing the vaccine, rather than administering." In total, Dar Santos administered vaccines for about 90 people.

As there were doses leftover from his two clinic shifts, Dar Santos also received a vaccination himself.

"There were extra doses left at the end of the day and because of that, there was an offer put out that vaccinators who were providing the service can arrange to vaccinate one another, if there was any left over," Dar Santos said, noting the importance that no vaccines go to waste.

"I think [in B.C.] we're probably one of the only jurisdictions where pharmacists are already starting to participate in these clinics. The reason why I wanted to do this was, it just got the ball rolling, to put our faces as pharmacists out there as contributors to put an end to this thing." T

Mohamed Zeid administers a flu shot for a patient at the Metchosin flu clinic, a mass clinic organized as part of a community effort.

Preparing for the 2020/21 flu season

How one Victoria pharmacy rallied allies to administer 2,500 flu vaccines to patients

BY MOHAMED ZEID, BSC(PHARM)

We are in a very unprecedented time and not solely because of our profession. Since the start of the COVID-19 pandemic, we have entered a time of uncertainty. Every day, we are overwhelmed by additional news and information that threatens to steer us off course. But this is also a time of opportunity: to set a new standard of clinical practices and help save lives. Now is the time for a shakeup to advance health care and we, as pharmacists, should be at the forefront of those advances.

By March 2020, the pandemic had arrived and with it came a barrage of uncertain recommendations to fight the virus. The public wanted answers. At our pharmacy in Victoria, I decided to take a different approach by conveying to my patients that the key to fight this virus—besides following the guidelines of public health—is to strengthen their immunity by controlling and managing the chronic conditions that they may have, in addition to updating all the possible vaccines that are due for our patients.

We began to vaccinate patients by appointments and through assigned clinics at my store to assure COVID safety guidelines were followed to protect staff and patients. For any patient who is under the age of 65 with respiratory conditions, or anyone who is 65 years or older, my advice was to complete the pneumonia protocol and consider that as an indirect fight against COVID-19. Then our thoughts turned towards the 2020/21 flu season. After speaking with my team, we agreed vaccinations against flu and pneumonia are cornerstones in our fight against COVID.

In previous years, we would arrange clinics with the Seniors' Information Centre of Metchosin, typically vaccinating 350 patients in two days. This year, we predicted that the demand would be doubled, so we had to work with other departments of the municipalities

Left: Pharmacist Mohamed Zeid and his pharmacy team administered more than 2,000 flu shots in the communities of Colwood and Metchosin. **Bottom right:** Care aid Carmen Monaghan, Zeid and fire hall volunteer Toni Choo make sure social distancing requirements are met.

in our community that would help us host this vaccine clinic in a safe way. We also knew we needed to plan early, so our preparation work began in the summer.

The first step was to contact both the cities of Metchosin and Colwood to see how they could help.

In Metchosin, we contacted Fire Chief Stephanie Dunlop, who we had communicated with for previous flu clinics organized at the Metchosin Fire Hall. She worked with us to organize a location—an old elementary school in Metchosin—which would be reserved entirely for the clinic.

As fire chief, Dunlop was aware of all the COVID-19 safety protocols. We set up waiting areas for before and after injections. Junior firefighters helped manage the crowd and traffic, while paramedics were notified and put on standby in case anyone should require emergency help. The Seniors' Information Centre of Metchosin also provided 25 volunteers to help.

In Colwood, our team contacted the city's strategic planning department. At the time, the city was working on a safe reopening program for their municipality. Our pharmacy's idea was included as a cornerstone of their program. With the city's involvement, online booking was set up through the city's website. Mayor Rob Martin also supported the program by announcing our vaccine clinic through the local radio station, resulting in fully booked clinics within days of online booking being set up.

The Juan de Fuca Recreation Centre was chosen as the location for the clinic. It was large enough to accommodate 50 patients every 30 minutes and was set up to include one-way entry and exits. The city further supported the event by providing signage for the venue, and volunteer firefighters with experience managing crowds also attended. During this time, we also consulted the local health officer to ensure all safety measures were being complied with.

With plans for these clinics in place, our pharmacy approached the West Shore Health Unit in June 2020. We explained our projected vaccine

DOSES ADMINISTERED

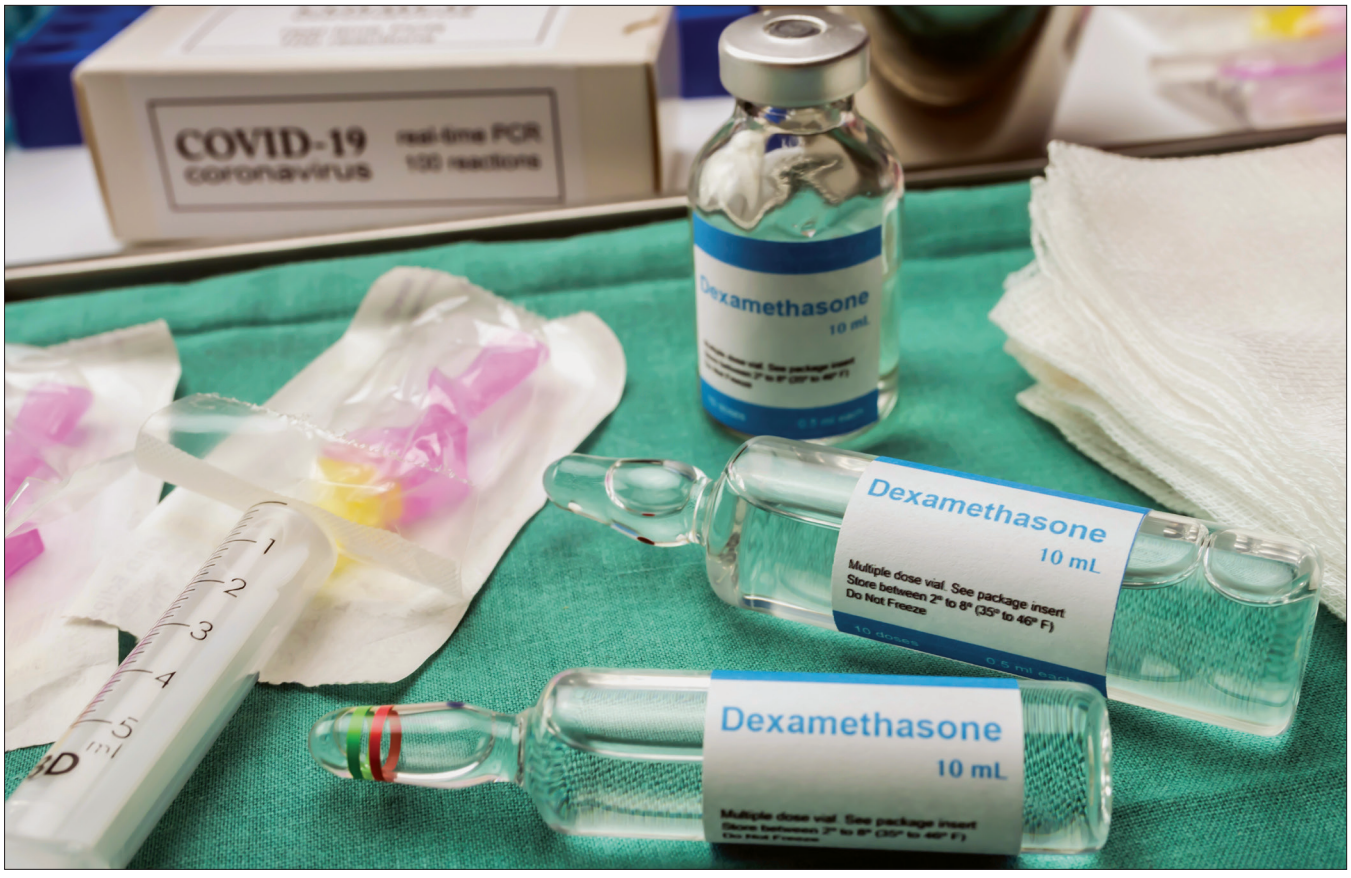
- Patients aged 65 and older: 1,052
- Patients aged 18 to 64: 1,048
- Patients aged 5 to 17: 400

Top left: Zeid draws a dose of the flu vaccine from a vial.
Bottom left: Volunteers from the Senior Information Resource Centre (SIRC)help organize supplies for the clinic.
Right: SIRC coordinator Laurine Sathaman hands out candies for patients who received their flu shots.

numbers, the expected age category we are targeting, along with the timing of the vaccinations in a presentation. The health unit was very enthusiastic, and this communication was crucial to ensure we received the vaccine supply to cover these public clinics. In addition, the health unit ensured we had adequate supplies of HD Fluzone for residents of the two senior homes.

In total, through these public clinics, our pharmacy administered 2,500 doses of flu vaccine for our communities this year. Among these patients, they included people who are essential for the safe reopening of our city, people who have other medical conditions that make them immune compromised, and people who are taking care of their vulnerable loved ones. In addition, we administered vaccines for children between 5 to 17 years who are going to school, which added extra protection for their families. T

Mohamed Zeid serves as pharmacy manager at Latoria Pharmacy IDA, located at 611 Brookside Road in Victoria.



COVID-19 Therapies

An overview of antivirals and immune modulators investigated for use in COVID-19

BY CESILIA NISHI, BSC(PHARM) ACPR PHARMD

Coronavirus disease 2019 (COVID-19), the disease caused by the virus SARS-CoV-2, maintains a strong grip on the world with over 92 million cases and 2 million deaths attributed to the disease worldwide to date.

Since the start of the pandemic, there has been a fervent search for pharmacologic therapeutics, from antivirals to therapies to treat this infection and modulate the immune response to the virus. From the outset, international bodies such as the World Health Organization (WHO) have recommended against the use of investigational therapies for COVID-19 outside of clinical trials. As such, a need to provide consistent and evidence-based therapeutic recommendations was quickly identified and the British Columbia COVID-19 Therapeutics Committee (CTC) was formed in March 2020.

Initially, the committee consisted of frontline clinicians, including pharmacists, from Vancouver General Hospital and St. Paul's Hospital, but has quickly expanded to have representation from all health authorities in the province, the Pharmaceutical Services Division of the Ministry of Health, as well as researchers. Our clinician committee members represent a wide variety of specialties including: anesthesia, antimicrobial stewardship, critical care, emergency medicine, family medicine, immunology, infectious diseases, internal medicine, hematology, medical microbiology, pediatrics, rheumatology, and pharmacy. Of our 43 committee members, 11 are pharmacists.

The CTC holds weekly to biweekly virtual meetings to review the latest literature on various COVID-19 therapeutics and provide

recommendations on the use of these agents. These recommendations are updated regularly on the British Columbia Centre for Disease Control (BCCDC)'s website. A small group of members have been assigned specific therapeutics to ensure that recommendations reflect the latest available published, as well as non-peer reviewed, unpublished, literature. The most recent version of the recommendations can be found at: bccdc.ca/health-professionals/clinical-resources/covid-19-care/clinical-care/treatments.

Therapies that have been investigated for use in COVID-19 can be divided in the following subcategories: antivirals, immune modulators, and supportive therapies. Notable antivirals and immune modulating therapies will be discussed below.

ANTIVIRALS

Despite initial excitement surrounding benefits seen with antivirals in small observational studies or case series, the results of the majority of published randomized controlled trials for antivirals have been negative to date.

Lopinavir/ritonavir

Lopinavir/ritonavir (Kaletra®), a protease inhibitor combination used in the management of human immunodeficiency virus (HIV), gained interest in its use for COVID-19 based on its *in vitro* activity against other coronaviruses such as Sever Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). Cao *et al.* conducted an open label, randomized controlled trial of lopinavir/ritonavir 400/100 mg orally twice daily for 14 days plus standard care versus standard care alone in 199 adult patients hospitalized with COVID-19 pneumonia requiring supplemental oxygen in Wuhan, China. For their primary outcome of time to clinical improvement, lopinavir/ritonavir did not improve the time to clinical improvement. However, due to the availability of remdesivir in China, this study was suspended early and was deemed to be underpowered to detect a difference. Subsequently, the RECOVERY Collaborative group—a clinical trial of possible treatments for people in the U.K. admitted to hospital with severe COVID-19 infection—has reported that lopinavir/ritonavir did not reduce 28-day mortality, duration of hospital stay, risk of progression to invasive mechanical ventilation or death. The WHO's international Solidarity Trial Consortium, which has enrolled nearly 12,000 patients in 500 hospitals in over 30 countries, has recently published similar findings in their interim analysis.

Hydroxychloroquine/chloroquine

The use of hydroxychloroquine and chloroquine for COVID-19 quickly gained notoriety following the publication of the non-randomized study by Gautret *et al.*, which suggested rapid viral clearance with hydroxychloroquine particularly when used in combination with azithromycin. However, due to several methodological issues with this study, the CTC recommended use only within randomized controlled trials. Since then, the RECOVERY Collaborative group and the Solidarity Trial Consortium have published the hydroxychloroquine portion of their studies, both of which have not found benefit in mortality. The RECOVERY Collaborative group also found that patients who received hydroxychloroquine had a longer duration of hospitalization and lower probability of survival, and also reported a numerically higher rate of cardiac death compared to the control group.

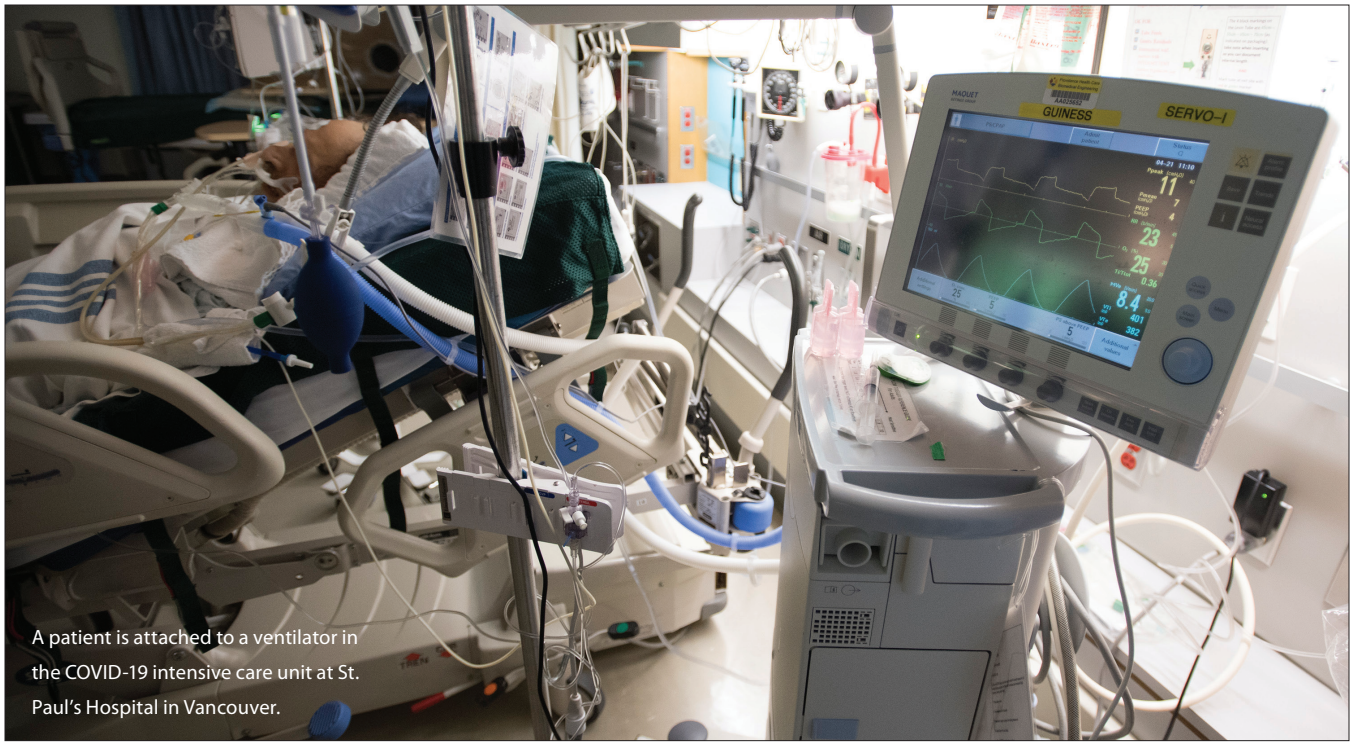
Remdesivir

Remdesivir is a monophosphoramidate prodrug of an adenosine analogue that has broad activity against several viruses including coronaviruses. The first published randomized controlled trial of remdesivir in COVID-19, conducted by Wang Y *et al.*, compared 10 days of remdesivir therapy versus placebo in adults hospitalized with COVID-19 pneumonia in Wuhan, China. Due to control of COVID-19 in Wuhan, this trial enrolled only 236 patients compared to the planned 453 patients. For the primary outcome of time to clinical improvement, no statistically significant difference between the groups was found. Of note, 65% and 68% of patients received corticosteroid treatment, respectively, in the two arms of this trial.

The ACTT-1 trial, a National Institute of Health-sponsored, randomized, controlled study, evaluated 10 days of remdesivir versus placebo in adults hospitalized with COVID-19 pneumonia. For the primary outcome of time to clinical recovery, remdesivir was associated with a shorter time to recovery than placebo (10 days versus 15 days). This was statistically significant for patients that required supplemental oxygen but not mechanical ventilation or high flow oxygen at baseline. No difference in mortality was observed. Overall, only 23% of patients received corticosteroids. Based on the ACTT-1 trial, organizations such as the Infectious Diseases Society of America have recommended the use of remdesivir for hospitalized patients with severe COVID-19.

In contrast, the WHO has issued a conditional recommendation against the use of remdesivir in hospitalized patients based on publication of the interim results of the remdesivir portion of the Solidarity Trial Consortium study. In the interim analysis of their open-label study, remdesivir was not associated with reduction in mortality, nor did it reduce initiation of ventilation or duration of hospital stay.

As the ACTT-1 study had relatively low use of corticosteroid (see corticosteroid section below), it is uncertain the extent of benefit remdesivir will have currently in hospitalized patients with COVID-19 where corticosteroids are now a standard of care. Thus, the CTC currently continues to recommend the use of remdesivir in the context of randomized controlled trials.



A patient is attached to a ventilator in the COVID-19 intensive care unit at St. Paul's Hospital in Vancouver.

JONATHAN HAYWARD - CANADIAN PRESS

IMMUNE MODULATORS

Corticosteroids

Initially, corticosteroids were not recommended for use in COVID-19 due to evidence of harm observed in other coronavirus infections, such as Severe Acute Respiratory Syndrome (SARS), and concern of delayed viral clearance. However, with the publication of the corticosteroid portion of the RECOVERY trial, corticosteroids are now considered standard of care for any hospitalized patient with COVID-19. In the dexamethasone portion of this large open-label study, hospitalized patients with COVID-19 were randomized to receive dexamethasone 6 mg orally or intravenously daily for up to 10 days versus standard of care. Dexamethasone was associated with a statistically significant reduction in 28-day mortality compared to standard of care.

Tocilizumab

Tocilizumab, a monoclonal antibody specific for interleukin-6, used for rheumatologic conditions such as rheumatoid arthritis and giant cell arteritis, gained interest in its use for the treatment of patients who develop severe hypoxemic respiratory failure. In such patients, elevations in interleukin-6, ferritin, and C reactive protein levels may be observed, similar to patients with cytokine storm following chimeric antigen receptor (CAR) T cell therapy, for which tocilizumab has been used. Initial results from clinical trials have been mixed. The BACC Bay Tocilizumab Trial Investigators found that tocilizumab, as compared to placebo, was not effective in preventing need for intubation or death in moderately-ill patients admitted to hospital with COVID-19. The COVACTA trial, which compared tocilizumab to placebo in patients admitted to hospital with COVID-19, did not find a difference in clinical status at day 28. EMPACTA found that tocilizumab reduced the likelihood of mechanical ventilation or death at day 28 in patients hospitalized with COVID-19, but not receiving mechanical ventilation. This study did not find a survival benefit with tocilizumab therapy.

More recently, the pre-print of the preliminary report of the interleukin-6 receptor antagonist portion of the open label REMAP-CAP trial was released. Adults hospitalized with COVID-19 within 24 hours of receiving cardiovascular and/or respiratory organ support, were randomized to receive tocilizumab, 8 mg/kg (to a maximum of 800 mg) intravenously (with an optional second dose given 12-24 hours after the first dose)(n=353), sarilumab 400 mg intravenously (n=48), or control (standard care)(n=402). For the primary outcome of organ support free days up to day 21, tocilizumab was associated with an odds ratio of 1.64 (95% credible interval 1.25, 2.14) as compared to control. Odds ratio of hospital survival with tocilizumab was 1.64 (95% credible interval 1.14, 2.35). Statistically significant benefit was also found with sarilumab. Nine versus 11 serious adverse events were reported in the tocilizumab and control groups, respectively. Based on the release of this preliminary report, the CTC currently recommends a single dose of tocilizumab in critically ill patients with COVID-19 within 24 hours of respiratory or cardiovascular support.

What can community pharmacists expect to see for patients with COVID-19 recently discharged from hospital?

All of the therapies discussed in this article were studied for use during hospitalization only. However, hospitalization, particularly with COVID-19, is associated with a number of complications that may require ongoing pharmacologic treatment. Like with any other hospitalization, nosocomial infections such as urinary tract infections, hospital acquired pneumonias and *Clostridium difficile*-associated diarrhea may occur. Thus, patients may be discharged with prescriptions to complete their anti-infective therapy. While dexamethasone therapy specifically for the treatment of COVID-19 was studied for use in hospital only, various complications in hospital such as acute respiratory distress syndrome, may require higher doses of corticosteroid, resulting in patients being discharged home with tapering doses of corticosteroid.

Finally, coagulopathies are common with COVID-19, resulting in thromboembolism, therefore some patients may require ongoing anticoagulation on hospital discharge.

The landscape for the management of COVID-19 is rapidly changing and it is important as health-care professionals to stay abreast of these changes. For further details on the therapies discussed in this article as well as many other therapies not included, please refer to the BCCDC COVID-19 Treatment page.

This article contains the latest information available on Jan. 18, 2021. For a full list of references, please visit bcpharmacy.ca. T

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It's a New Year – Now What?

BY DEREK DESROSIERS, BSC(PHARM), RPH

The first quarter of a new year can be an exciting time of year in pharmacy. The big Christmas season is over. Some pharmacy owners will have taken a nice break over the holidays and come back to work rested, refreshed and invigorated to make some positive business changes. For those who are not in that position but remain anxious, overworked and ill equipped to plan and take control of your business, believe me when I tell you: you are not alone. Especially given the general public anxiety over the COVID pandemic, things probably still seem highly charged for many of you. Add the vaccine distribution and administration issues into the mix and you've got a recipe for some emotional, irrational decision making.

For every pharmacist feeling inspired and ready to tackle 2021, there are two or three other pharmacists who are feeling overwhelmed and unsure where to start. This is normal and it's not your fault. The past nearly year of pandemic issues culminating with the holiday trading season often forces planning to the background. The best made plans get put on the back burner and often are not executed. You might have the same feeling as if you hosted a great party but now you have to clean up the mess that was left behind. So, where do you start?

The first step in cleaning up the mess is to get your staff back on track with not just their normal tasks but letting them know that something exciting is coming and then get to work on that. For many of you that may be planning for COVID vaccination clinics. But, it could be some other exciting initiative you have planned for the new year. Here's what I suggest you focus your energy on.

Start with ensuring you have developed and implemented a strong safety plan for your staff and customers. If you haven't done this yet, it should be your top priority. Think about it from the customer experience (CX) perspective. Measuring appropriate metrics related to new safety measures can go a long way to connecting with customers and enhancing the CX. For example, you could calculate a Customer Satisfaction Score (CSAT) by asking, "How would you rate your overall satisfaction with our new pandemic safety measures?" Use the most common five-point scale with options 1. very unsatisfied, 2. unsatisfied, 3. neutral, 4. satisfied, and 5. very satisfied. Then calculate the CSAT by focusing in on the 4-5 responses. (Number of 4 and 5 responses) / (Number of total responses) x 100 = % of satisfied customers.

Gathering the responses can be done through online and social media channels but may be most effective if done as a quick exit survey by customers when leaving the pharmacy. Think of those cleanliness rating type kiosks you sometimes see in airport washrooms asking you to push a button to rate your experience with cleanliness or you'll even see them at fast food restaurants asking for a rating on service or wait time etc. That type of technology would make an exit survey very user friendly.

Set some realistic achievable goals for you and your pharmacy business. The vital areas to consider are marketing, sales, gross profit, expenses and net profitability. The first two provide the revenue and the second two ensure that the flow of revenue leads to a strong flow of net income.

Then decide what marketing strategies you're going to use to bring in the right type and volume of customers and identify exactly what products and services they want and need. If you do your research well, your buying will be optimised. You'll have better stock turn, less dead stock, can choose products that meet customer needs and maintain or increase your gross profit margin. If you do your planning properly you'll improve your gross margin and decrease your expenses as well as building a robust marketing funnel to bring in a steady stream of regular, loyal customers who spend more and take your professional advice.

Once you have these aspects in place, the final important step is to maximise your turnover and sales. Your staff are key here. Planning how best to incentivize them is valuable (hint: monetary reward isn't a motivator for everyone) as well as checking on their selling skills. It is possible for them to sell gracefully and with integrity. Do they know how to do that? Do they want to?

We all know how critical it is for the pharmacy team to be engaged, motivated and inspired but it can be tricky for any business owner to find the right formula to keep the team excited and cohesively working towards a common goal. Communicating that big goal openly, getting them involved in setting the targets along the way, setting KPIs to measure success and communicating the KPIs and progress towards them goes a long way. Knowing the personalities of your team (or your key managers knowing) and leading and incentivizing them on that basis should take you most of the rest of the way.

The last frontier though, and the deal breaker for some, is engaging your staff in the activity of selling.

(This article is largely based on, and includes some material originally written by Linda Miller of Pharmacy Profit Secrets in Australia.) T

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- sales
- gross profit
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The big picture

Throughout 2020, the BC Pharmacy Association hosted three virtual town halls for the first time in its history, offering members critical updates on COVID-19 protocol and the Association's overall mission and goals. The town halls were also a vital opportunity for the BCPhA leadership to glean feedback directly from members on the issues that matter most right now in pharmacy.

The first town hall was hosted on Mar. 12, with up to 527 members attending at the meeting's peak. The majority of the town hall was devoted to the COVID-19 outbreak, highlighting the BCPhA's outreach to the College, public health and Ministry to clarify issues surrounding the pandemic, then in its infancy.

The second town hall was hosted on Jun. 10, with at least 700 members attending to share their concerns about working on the frontlines, delivering service to vulnerable patients and keeping staff and patients safe during to the continued pandemic. The upcoming flu season was a major topic of interest for members.

The third and final town hall of 2020 took place on Dec. 2, with at least 450 members attending to share their views on setting the Association's priorities for the next four years, particularly around how the future of COVID-19 and its vaccines will impact pharmacy in the short and long term.

Miss any of the town halls?
Download all three meetings at **bcpharmacy.ca/town-halls**

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